ABSTRACT

A Mobile Station (MS) is able to vertically roam in either direction between two different networks, i.e., WWAN and WLAN. The MS is equipped with a dual mode Radio for WWAN and WLAN transmissions. The WLAN Radio is linked to a WLAN Enterprise Gateway Controller (EGC) via a first air link and the WWAN Radio is linked to a WWAN Base Transceiver Station (BTS) via a second air link. ~~The EGC is connected to a Mobile Switching Center (MSC) which is in turn connected to the BTS.~~ An outgoing VoIP call from the WLAN Radio to a remote party on the WWAN will transition or seamlessly switch over to a WWAN connection when the MS detects packet error rates, frequent scale back or consistent signal degradation. ~~Upon such conditions, the WLAN Radio requests the EGC to request an Explicit Call Transfer via the MSC to the MS integrated WWAN Radio portion which automatically accepts the call based on referenced information stored in the user's subscriber identification module (SIM). Once the WWAN Radio is confirmed connected to the remote party on the WWAN, the WLAN Radio drops the WLAN connection. An incoming call between the MS and a remote user via the WWAN will transition to the WLAN Radio when the MS enters WLAN coverage. The MS issues an ECT to the WLAN. After user verification by the WLAN Radio and the EGC signals acceptance of the call, the WWAN Radio connection is dropped and the call is now established between the WLAN Radio and the remote party on the WWAN.~~